

Attorney Docket No.: 11872/022001  
Client Ref.: 30-4016 US REISSUE

## **REISSUE APPLICATION DECLARATION AND POWER OF ATTORNEY BY THE INVENTORS**

As the below named inventors, we hereby declare that: our residence, post office address and citizenship are as stated below next to our names, we believe we are the original, first and sole inventors of the subject matter which is described and claimed in **Letters Patent Number 5,868,123** entitled **MAGNETIC CORE-COIL ASSEMBLY FOR SPARK IGNITION SYSTEMS**, issued on February 9, 1999, attached hereto, and for which invention we solicit a reissue patent.

### **ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR**

We hereby state that we have reviewed and understand the contents of the attached specification, including the claims, and including the new claims 8-18 attached hereto, which are referred to in detail below.

We acknowledge the duty to disclose information which is material to the patentability of this application, namely, information that a reasonable Examiner would consider important in deciding whether to allow the application to issue as a patent as set forth in 37 C.F.R. §1.56.

### **PRIORITY CLAIM**

We hereby claim priority benefits under Title 35, United States Code, §119(e) of U.S. provisional application no. 60/004,815 filed on October 5, 1995.

### **STATEMENT OF INOPERATIVENESS OF ORIGINAL PATENT 37 CFR 1.175**

We believe that U.S. Patent No. 5,868,123 is partly inoperative because it claims less than we had the right to claim. In particular, issued independent claim 1 appears as follows:

February 1, 2001

Attorney Docket No.: 11872/022001  
Client Ref.: 30-4016 USA

1. A magnetic core-coil assembly for generating an ignition event in a spark ignition internal combustion system having at least one combustion chamber, comprising a magnetic core that is iron-based and further comprises metallic elements including nickel and cobalt, glass forming elements including boron and carbon, and semi-metallic elements, including silicon, said core being fabricated by heat treating an amorphous magnetic alloy and having a primary coil for low voltage excitation and a secondary coil for a high voltage output to be fed to a spark plug, said core-coil assembly having the capability of
- (i) generating a high voltage output in the secondary coil within a short period of time following excitation thereof, and
  - (ii) sensing spark ignition conditions in the combustion chamber to control the ignition event.

The underlined portion of claim 1, above, unnecessarily limits our invention to an iron-based magnetic core that includes metallic elements including nickel and cobalt, glass forming elements including boron and carbon, and semi-metallic elements, including silicon, the core being fabricated by heat treating an amorphous magnetic alloy. We have been informed that the underlined limitations were added to claim 1 in response to the Office Action dated March 31, 1997, to distinguish our invention from prior art cited by the United States Patent and Trademark Office. However, such a limitation was not necessary because claim 1 did not require such an amendment to overcome the cited prior art. This limitation of claim 1 was made with the mistaken belief that it was necessary, and this mistake occurred because we (the inventors) were not consulted while the application was pending in the United States. Claims 2 through 7 of U.S. Patent No. 5,868,123 all depend on claim 1, and thus also are partially inoperative for the same reason.

The mistake concerning claim 1 was first discovered by an employee of our company in approximately late May or June of 2000, during a review of the claims that issued in this case. At that time, the employee spoke to Ryusuke Hasegawa, the named inventor on the patent, who was surprised that claim 1 included such limitations. The employee prepared some proposals for rewording the claims and contacted applicants' attorney in late August 2000. Applicants' attorney then contacted Ryusuke Hasegawa and further discussed claim 1 in relation to the cited prior art. A determination was then made by the attorney that claim 1 of U.S. Patent No. 5,868,123 is too narrow. New

Attorney Docket No.: 11872/022001  
Client Ref.: 30-4016 USA

claims that do not include all of the underlined verbiage, but that include several other limitations, were suggested to distinguish the invention from the cited prior art. Consequently, this reissue application contains new claims 8-18 which are discussed in detail below.

New independent claim 8, appearing below, recites that the core comprises an amorphous metal but otherwise does not include any part of the underlined limitations of claim 1 as set forth above. Claim 8 recites different limitations relating to the amorphous metal core "...being non-gapped, and having a permeability ranging from about 100 to 300.". These limitations are not present in claim 1, and thus claim 8 is of different scope. Claim 8 more particularly points out and distinctly claims our invention, distinguishes our invention over the cited prior art, and should have been part of our patent. This error occurred without deceptive intent. Claim 8 recites:

8. A magnetic core-coil assembly for generating an ignition event in a spark-ignition internal combustion system having at least one combustion chamber, comprising a magnetic core having a primary coil for low voltage excitation and a secondary coil for a high voltage output to be fed to a spark plug, the core comprising amorphous metal, being non-gapped, and having a permeability ranging from about 100 to 300, said core-coil assembly having the capability of (i) generating a high voltage in the secondary coil within a short period of time following excitation thereof, and (ii) sensing spark ignition conditions in the combustion chamber to control the ignition event.

Claims 9-12 attached hereto either directly or indirectly depend on claim 8, are allowable for at least the same reasons, and more particularly and distinctly claim our invention. These claims should have been part of our patent but for the error explained above. These errors occurred without deceptive intent.

New independent claim 13, appearing below, recites that the core is an iron-based amorphous metal that is heat treated, but otherwise does not include any other part of the underlined portions of claim 1 appearing above. Claim 13 recites instead that the amorphous metal core is "...heat treated to have a permeability ranging from about 100 to 300.". Since this limitation is not present in claim 1, claim 13 is of a different scope. Claim 13 more particularly points out and distinctly claims our invention, distinguishes

Attorney Docket No.: 11872/022001  
Client Ref.: 30-4016 USA

our invention from the cited prior art, and should have been part of our patent. This error occurred without deceptive intent. Claim 13 recites:

13. A magnetic core-coil assembly for generating an ignition event in a spark-ignition internal combustion system having at least one combustion chamber, comprising a magnetic core having a primary coil for low voltage excitation and a secondary coil for a high voltage output to be fed to a spark plug, the core comprising iron-based amorphous metal heat-treated to have a permeability ranging from about 100 to 300, said core-coil assembly having the capability of (i) generating a high voltage in the secondary coil within a short period of time following excitation thereof, and (ii) sensing spark ignition conditions in the combustion chamber to control the ignition event.

New claim 14 directly depends on claim 13, is allowable for at least the same reasons, and more particularly and distinctly claims our invention. This claim should also have been part of our patent but for the error explained above. This error occurred without deceptive intent.

New independent claim 15, appearing below, recites that the core is of iron-based amorphous metal, but otherwise does not include any other part of the underlined portions of claim 1. The core of claim 15 is: "...non-gapped," and because the limitation of a non-gapped core is not present in claim 1, claim 15 is of a different scope. Claim 15 particularly and distinctly claims the invention, distinguishes our invention over the cited art, and should have been part of the patent. This error occurred without deceptive intent. Claim 15 recites:

15. A magnetic core-coil assembly for generating an ignition event in a spark-ignition internal combustion system having at least one combustion chamber, comprising a magnetic core having a primary coil for low voltage excitation and a secondary coil for a high voltage output to be fed to a spark plug, the core comprising iron-based amorphous metal and being non-gapped, said core-coil assembly having the capability of (i) generating a high voltage in the secondary coil within a short period of time following excitation thereof, and (ii) sensing spark ignition conditions in the combustion chamber to control the ignition event.

Attorney Docket No.: 11872/022001  
Client Ref.: 30-4016 USA

New claim 16 depends on claim 15 and is allowable for at least the same reasons. In addition, claim 16 more particularly and distinctly claims our invention and should have been part of our patent, but for the error explained above. This error occurred without deceptive intent.

New independent claim 17, appearing below, recites that the core comprises an iron-based metal which is recited in claim 1. But claim 17 also recites that the core "...having a permeability ranging from about 100 to 300,". This limitation is not present in claim 1, and therefore claim 17 is of a different scope. Claim 17 more particularly points out and distinctly claims our invention, and distinguishes our invention from the cited prior art. Claim 17 should have been part of our patent and this mistake occurred without deceptive intent, as explained above. Claim 17 recites:

17 A magnetic core-coil assembly for generating an ignition event in a spark-ignition internal combustion system having at least one combustion chamber, comprising a magnetic core having a primary coil for low voltage excitation and a secondary coil for a high voltage output to be fed to a spark plug, the core comprising iron-based amorphous metal and having a permeability ranging from about 100 to 300, said core-coil assembly having the capability of (i) generating a high voltage in the secondary coil within a short period of time following excitation thereof, and (ii) sensing spark ignition conditions in the combustion chamber to control the ignition event.

New claim 18 depends on claim 17 and should be allowable for at least the same reasons. Claim 18 more particularly and distinctly claims our invention and thus should have been part of our patent. Due to the error explained above, claim 18 was not included, and this error occurred without deceptive intent.

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**POWER OF ATTORNEY**

We hereby appoint the following attorneys to prosecute this application and transact all business in the U.S. Patent and Trademark Office connected therewith:

Charlotte Copperthite, Reg. No. 32,975  
John B. Pegram, Reg. No. 25, 198  
Frederick H. Rabin, Reg. No. 24,488  
Stephan J. Filipek, Reg. No. 33,384  
Samuel Borodach, Reg. No. 38,388  
Richard P. Ferrara, Reg. No. 30,632  
Andrew N. Parfomak, Reg. No. 32,431  
Fish & Richardson P.C.  
45 Rockefeller Plaza  
Suite 2800  
New York, NY 10111

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**BY THE INVENTORS**Full name of inventor Ryusuke Hasegawa

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship United StatesResidence 29 Hill Street, Morristown, NJ 07967Post Office Address (Same as Above)

Attorney Docket No.: 11872/022001

Client Ref.: 30-4016 USA

Full name of inventor John Silgailis

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship United StatesResidence 1 Maija 6/12, Emburga LV 3045, LATVIAPost Office Address (Same as Above)Full name of inventor Donald Allen GrimesInventor's signature Donald Allen GrimesDate 7 February 2001 Country of Citizenship United StatesResidence 126 W. McPherson Avenue, Findlay, OH 45840Post Office Address (Same as Above)

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Attorney Docket No.: 11872/022001  
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## **ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR**

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February 1, 2001



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Attorney Docket No.: 11872/022001  
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February 1, 2001

2

Attorney Docket No.: 11872/022001  
Client Ref.: 30-4016 USA

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New independent claim 8, appearing below, recites that the core comprises an amorphous metal but otherwise does not include any part of the underlined limitations of claim 1 as set forth above. Claim 8 recites different limitations relating to the amorphous metal core "...being non-gapped, and having a permeability ranging from about 100 to 300.". These limitations are not present in claim 1, and thus claim 8 is of different scope. Claim 8 more particularly points out and distinctly claims our invention, distinguishes our invention over the cited prior art, and should have been part of our patent. This error occurred without deceptive intent. Claim 8 recites:

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New independent claim 13, appearing below, recites that the core is an iron-based amorphous metal that is heat treated, but otherwise does not include any other part of the underlined portions of claim 1 appearing above. Claim 13 recites instead that the amorphous metal core is "...heat treated to have a permeability ranging from about 100 to 300.". Since this limitation is not present in claim 1, claim 13 is of a different scope. Claim 13 more particularly points out and distinctly claims our invention, distinguishes

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New claim 14 directly depends on claim 13, is allowable for at least the same reasons, and more particularly and distinctly claims our invention. This claim should also have been part of our patent but for the error explained above. This error occurred without deceptive intent.

New independent claim 15, appearing below, recites that the core is of iron-based amorphous metal, but otherwise does not include any other part of the underlined portions of claim 1. The core of claim 15 is: "...non-gapped," and because the limitation of a non-gapped core is not present in claim 1, claim 15 is of a different scope. Claim 15 particularly and distinctly claims the invention, distinguishes our invention over the cited art, and should have been part of the patent. This error occurred without deceptive intent. Claim 15 recites:

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February 1, 2001

4

Attorney Docket No.: 11872/022001  
Client Ref.: 30-4016 USA

New claim 16 depends on claim 15 and is allowable for at least the same reasons. In addition, claim 16 more particularly and distinctly claims our invention and should have been part of our patent, but for the error explained above. This error occurred without deceptive intent.

New independent claim 17, appearing below, recites that the core comprises an iron-based metal which is recited in claim 1. But claim 17 also recites that the core "...having a permeability ranging from about 100 to 300,". This limitation is not present in claim 1, and therefore claim 17 is of a different scope. Claim 17 more particularly points out and distinctly claims our invention, and distinguishes our invention from the cited prior art. Claim 17 should have been part of our patent and this mistake occurred without deceptive intent, as explained above. Claim 17 recites:

17 A magnetic core-coil assembly for generating an ignition event in a spark-ignition internal combustion system having, at least one combustion chamber, comprising a magnetic core having a primary coil for low voltage excitation and a secondary coil for a high voltage output to be fed to a spark plug, the core comprising iron-based amorphous metal and having a permeability ranging from about 100 to 300, said core-coil assembly having the capability of (i) generating a high voltage in the secondary coil within a short period of time following excitation thereof, and (ii) sensing spark ignition conditions in the combustion chamber to control the ignition event.

New claim 18 depends on claim 17 and should be allowable for at least the same reasons. Claim 18 more particularly and distinctly claims our invention and thus should have been part of our patent. Due to the error explained above, claim 18 was not included, and this error occurred without deceptive intent.

February 1, 2001

5

Attorney Docket No.: 11872/022001

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We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**BY THE INVENTORS**Full name of inventor Ryusuke HasegawaInventor's signature *Ryusuke Hasegawa*Date 08 FEB 2001 Country of Citizenship United StatesResidence 29 Hill Street, Morristown, NJ 07967Post Office Address (Same as Above)

February 1, 2001

6

Attorney Docket No.: 11872/022001  
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Full name of inventor John Silgailis

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Residence 1 Maija 6/12, Emburga LV 3045, LATVIA

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Full name of inventor Donald Allen Grimes

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30039665.doc

February 1, 2001

7